BOSCH

PRA-IM16C8 Control interface module, 16x8
PRAESENSA

▶ Sixteen general purpose inputs for control actions from external switches

▶ Eight general purpose relay outputs to activate external control circuits

▶ Two supervised trigger outputs for NAC boosters

▶ PoE powered device with dual redundant Gigabit network interface

▶ LED status indicators for all inputs and outputs

The PRA-IM16C8 Control interface module adds configurable and supervised control inputs, voltage-free control outputs and supervised trigger outputs to the PRAESENSA system. These contact inputs and outputs provide the easy logic connectivity of a PRAESENSA system to auxiliary equipment such as fire alarm systems, strobes, indicators, or speaker relays.
The PRA-IM16C8 enclosure allows for DIN rail installation near to the auxiliary equipment for short interconnections. The module only requires a connection to an OMNEO IP-network with Power over Ethernet (PoE) for communication and for power supply combined.

- Two supervised 12 V trigger outputs to trigger a booster for Notification Appliance Circuits (NAC), such as strobes and horns. Supervision happens through polarity reversal in combination with an end-of-line resistor.
- Control input and output functions are configurable in the software.
- LEDs indicate the operational status and the fault status of all inputs and outputs.

Installation
- The compact enclosure for DIN-rail mounting allows for easy installation in most applications and environments.
- Pluggable spring-cage terminal blocks for easy wire connection.
- Connection supervision of control inputs, trigger outputs and network connections, including ground short supervision.

Functions

IP-network connection
- Direct connection to the IP-network. One shielded CAT5e cable is sufficient for Power over Ethernet and for data exchange.
- Connect a second shielded CAT5e cable for dual redundancy of network and of power connection.
- Integrated network switch with two OMNEO ports allows for loop-through connections to adjacent devices that provide PoE. Rapid Spanning Tree Protocol (RSTP) is supported to enable recovery from failing network links.

General-purpose control inputs and outputs
- Sixteen control inputs receive contact closure information from external systems with configurable connection supervision.
- Eight relay contacts, voltage-free and with single-pole and double-throw (SPDT), to activate external devices.
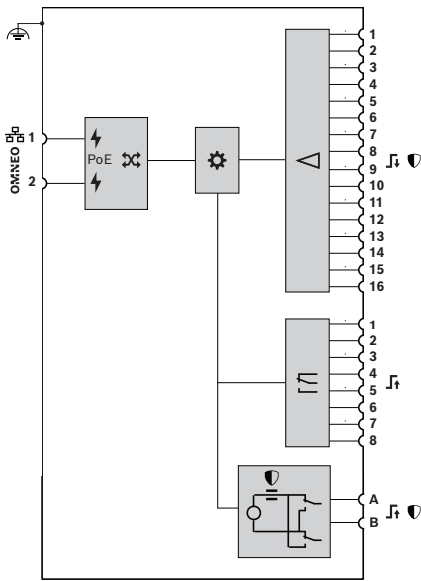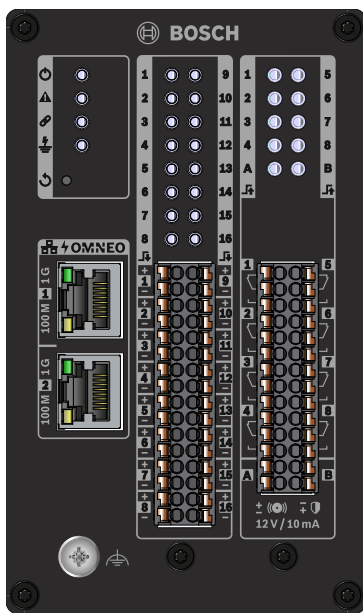
Connection and functional diagram

⚡	Power over Ethernet	⚙	Controller
⤬	OMNEO network switch	◁	Control input processor
🛡	Supervision	⊐	Control output relay
⏚	Supervision current detector	⦵	Current limited voltage source

Front panel indicators and controls

⏻	Power on	Green
⚠	Device fault present	Yellow

🔗	Network link to system controller present Network link lost	Green Yellow
⏚	Ground fault present	Yellow
↺	Device reset to factory default	Button
🌐	100 Mbps network 1Gbps network	Yellow Green
⬇	Input contact closed 1-16 Input connection fault 1-16	Green Yellow
⬆	Output contact activated 1-8 Output contact activated A-B Output connection fault A-B	Green Green Yellow
	Identification mode / Indicator test	All LEDs blink

Front panel connections

OMNEO	Network port 1-2 (PoE PD)	
⬇	Control input 1-16	
⏚	Functional ground	
⬆	Control output 1-8	
⬆	Trigger output A-B	

Architects' and Engineers' Specifications

The IP-networked control interface module shall be designed exclusively for use with Bosch PRAESENSA systems. The module shall provide an interface to receive control actions from external switches and to trigger external control circuits. The control data communication shall use OMNEO with dual Ethernet ports for redundant network connection, supporting RSTP and loop-through cabling. It shall be capable of receiving Power over Ethernet (PoE) through either one or both network connections. The DIN rail housing provides removable terminal blocks to connect 16 configurable general-purpose control inputs with connection supervision, 8 voltage-free, single-pole double-throw (SPDT) relay contacts and 2 trigger outputs for NAC boosters with reverse polarity

connection supervision. The control interface module shall be certified for EN 54-16 and ISO 7240-16, marked for CE and be compliant with the RoHS directive. The warranty shall be three years minimum. The control interface module shall be a Bosch PRA-IM16C8.

Regulatory information

Emergency standard certifications

Europe	EN 54-16 (0560-CPR-182190000)
International	ISO 7240-16

Regulatory areas

Safety	IEC/CSA/UL 62368-1
Immunity	EN 55035 EN 50130-4
Emissions	EN 55032 EN 61000-6-3 ICES-003 FCC-47 part 15B class A
Environment	EN/IEC 63000

Parts included

Quantity	Component
1	Control interface module, 16x8
1	DIN rail mounting bracket (pre-assembled)
1	Set of connectors
34	Supervision resistors, 10 kohm
1	Safety and security information booklet
1	Quick installation guide

Technical specifications

Electrical

Power transfer

PoE input	IEEE 802.3af, Class 2
Nominal voltage (VDC) (input)	48 VDC
Input voltage (VDC) (tolerance)	37 VDC – 57 VDC
Power consumption (W)	4.50 W

Network interface

Ethernet type	100BASE-TX; 1000BASE-T
Protocols / standards	TCP/IP
Redundancy	RSTP
Control protocol	OMNEO (OCA/AES70)
Encryption	TLS
Number of PoE ports	2

Control interface

Number of control inputs	16
Principle	Contact closure
Galvanic isolation	No
Supervision	Resistance measurement
Contact closed (kohm)	8 kohm – 12 kohm
Contact open (kohm)	18 kohm – 22 kohm
Cable fault detection (kohm)	<2.5 kohm / >50 kohm
Minimum hold time (ms)	100 ms
Maximum voltage to ground (V)	24 V
Number of control outputs	8
Principle	Contact switch over (Relay SPDT)
Galvanic isolation	Yes
Maximum contact voltage (V)	24 V
Maximum contact current (A)	1 A
Maximum voltage to ground (V)	500 V
Trigger output contacts	A-B
Principle	Bipolar control voltage
Galvanic isolation	No
Output voltage (VDC)	11 VDC – 12 VDC
Output current (mA)	15 mA maximum
Cable fault detection (kohm)	<2.5 kohm / >50 kohm

Supervision

Control input connections	Open / short
Trigger output connections	Open / short
Ground fault	<50 kohm leakage
Controller continuity	Watchdog
Network interface	Link presence
PoE 1-2	Voltage

Reliability

Mean time between failures (MTBF) (h) (Telcordia SR-332 Issue 3)	2,200,000 h

Environmental

Operating temperature (℃)	-5 ℃ – 50 ℃
Operating temperature (℉)	23 ℉ – 122 ℉
Storage temperature (℃)	-30 ℃ – 70 ℃
Storage temperature (℉)	-22 ℉ – 158 ℉
Operating relative humidity, non-condensing (%)	5% – 95%
Air pressure (hPa)	560 hPa – 1,070 hPa
Installation altitude (m)	-500 m – 5,000 m
Installation altitude (ft)	-1,640 ft – 16,404 ft
Operating vibration	
Amplitude (mm)	< 0.35 mm
Acceleration (G)	< 2 G
Bump (transport) (G)	< 10 G

Mechanical

Dimensions (H x W x D) (mm)	131 mm x 78 mm x 100 mm
Dimensions (H x W x D) (in)	5.2 in x 3.1 in x 4.0 in
IP rating	IP30
Material	Aluminum

Color in RAL	RAL 9017 Traffic black
Weight (kg)	0.57 kg
Weight (lb)	1.30 lb

Ordering information

PRA-IM16C8 Control interface module, 16x8
Network connected, PoE powered, general purpose control interface module.
Order number **PRA-IM16C8 | F.01U.378.929**